openreach

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Suppliers' Information Note

For The Openreach Network

Service Description and WITHDRAWAL NOTIFICATION

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CONTENTS

1. GENERAL. 3

2. SERVICE AVAILABILITY 3

3. INTERFACE DESCRIPTION 3

4. INTERWORKING WITH OTHER SERVICES 3

5. FUTURE DEVELOPMENTS 3

6. REFERENCES 4

7. HISTORY 4

ANNEX 1 - SERVICE FACILITIES 5

1. INTRODUCTION 5

2. FACILITY AVAILABILITY 5

3. DIRECTORY NUMBER ALLOCATION 6

4. BRIEF DESCRIPTIONS OF FACILITIES 6

5. INTERACTIONS BETWEEN FACILITIES 8

6. PROCESSING OF 3.1 KHZ AUDIO CALLS 8

7. SWAP 9

1. GENERAL.

2. This Suppliers Information Note describes the BT ISDN 30 (DASS) service, based on DASS 2 (Digital Access Signalling System No. 2). It is intended to provide general information about the service for apparatus manufacturers and developers. ERVICE AVAILABILITY

2.1 The service was launched in October 1988 as Multiline IDA. In January 1991 it was renamed ISDN 30 (DASS).

2.2 The service is available from anywhere within the country.

2.3 Openreach will withdraw the ISDN30 (DASS) service by the end of January 2027 in line with the closure of the BT UK PSTN.

3. INTERFACE DESCRIPTION

3.1 The interface is described in BTNR 190, Part 1, Issue 2, June 1992.

3.2 The customer interface is presented to the user via a NTU (Network Terminating Unit) with a coax connection. Various technologies are used to provide the ISDN 30 (DASS) access and the NTU may either be line powered or locally powered depending on the technology used. Locally powered NTUs will require a mains supply and as an option, back-up standby power can be provided.

3.3 Certain features exist as part of the service, which are described in BTNR 190, Part 1, Issue 2, June 1992. These features are either provided by BT administrative action or require subscriber signalling (Annex 1 refers).

4. INTERWORKING WITH OTHER SERVICES

4.1 Interworking of telephony calls is possible between services such as the PSTN and BT's ISDN services.

4.2 Calls requesting the Category 1 type call will only be supported on wholly digital routes between the users of BT's ISDN basic and primary rate ISDN services and certain international routes.

5. FUTURE DEVELOPMENTS

BT has no plans to enhance the BT ISDN 30 (DASS 2) service.

ABBREVIATIONS

DASS 2	Digital Access Signalling System No. 2
ISPBX	Integrated Services Private Branch Exchange
ISDN	Integrated Services Digital Network
Multiline IDA	BT's old name for ISDN 30 (DASS)
NTU	Network Terminating Unit
PSTN	Public Switched Telephone Network
SIN	Suppliers Information Note

6. REFERENCES

British Telecom Network Requirements (BTNR)

BTNR 190, Issue 2, June 1992, Part 1. (The BTNR only describes those facilities, which have subscriber signalling between the terminal equipment and BT's network.)

7. HISTORY

Issue 2.0	November 1992	
Issue 2.1	November 2000	editorial update
Issue 2.2	October 2001	editorial update; incorporation of SIN 294 and SIN 363.
Issue 2.3	April 2003	Approval Requirements statement removed, information available via SINet Useful Contacts page.
Issue 2.4	April 2006	Updated to include the availability of ACR and announce the progressive withdrawal of CCRD, TLID and CCI following the implementation of 21CN.
Issue 2.5	July 2007	Updated to include Presentation Number which had been omitted in error.
Issue 2.6	June 2008	Update in Annex 1, Section 6 on the handling of 3.1 kHz international calls
Issue 2.7	October 2009	Further information on Annex 1 Section 4.12 on Calling Line Identity
Issue 2.8	February 2015	Change SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/
Issue 2.9	September 2015	Updated text in Annex 1, Section 6, to remove an anachronistic reference to a BT programme of work.
Issue 2.10	May 2019	Update in Annex 1, Section 6 removing the reference to SIN 206 and the special handling of 3.1kHz Audio SICs at International gateways.
Issue 2.11	May 2020	Change SINet site references from http://www.btplc.com/sinet/ to https://www.openreach.co.uk/orpg/home/helpandsupport/sins/sins.do
Issue 2.11	August 2021	Annual review of Sins document. No changes made. Issue number remains the same
Issue 2.11	August 2022	Annual Review – branding and font changes only – issue remains unchanged
Issue 2.11	September 2023	Annual Review – branding and font changes only – issue remains unchanged
Issue 2.12	November 2024	Service withdrawal notification added in new section 2.3. Abbreviations section also updated.

ANNEX 1 - SERVICE FACILITIES

1. INTRODUCTION

This annex provides information of a general nature which it is hoped will be useful to suppliers of DASS 2 equipment.

This information in the table below is not necessarily exhaustive. It is provided without prejudice. The information is indicative of BT's current expectations for the ISDN 30 (DASS) service.

2. FACILITY AVAILABILITY

Service	Now
Non DDI Hunt Groups	Y
Direct Dial In (DDI)	Y
Direct Exchange Line (DEL)	Y
Category 1 Calls	Y
Category 2 Calls	Y
Incoming 3.1 kHz audio Calls	Y
Permanent Incoming Call Barring	Y
Permanent Outgoing Call Barring	Y
Administration Provided diversion on	
Basic	Y
Engaged/Failure	Y
Ring Tone No Reply	Y
Customer Controlled Diversion	Y
Bypass Number	Note 1
Calling Line Identity (CLI)	Y
Calling Line Identity Restriction (CLIR)	Y
Connected Line Identity Restriction (COLR)	Y
Terminating Line Identity Display (TLID)	Note 2
Call Charge Indication (CCI)	Note 2
Network Address Extension (Sub Addressing)	Y
Customer Controlled Channel Busying	Y
Customer Controlled Call Barring	Y
Selective Outgoing Call Barring	Y
Call Charge Rate Data (CCRD)	Note 2
Malicious Call Identification	Y
Anonymous Call Rejection (ACR)	Y
Presentation Number	Y

Note 1: Not available for new provision.

Note 2: TLID, CCI and CCRD are not supported on BT’s 21CN network platform and hence from November 2006, these services will be progressively withdrawn as the 21CN network platform is rolled out.

3. DIRECTORY NUMBER ALLOCATION

3.1 Non DDI Hunt Groups.
Customers can have a group of channels allocated to one directory number. The hunting between the channels is Sequential.

3.2 Direct Dial In (DDI).
A range of numbers (DDI) allocated to a group of channels at the telephone exchange and the last 1 to 6 digits of a number are forwarded to the ISPBX to identify the extension being called. The hunting between channels is Sequential.

3.3 One Directory Number per channel.
This enables one channel to be allocated against one directory number. It can be used like a Direct Exchange Line (DEL).

4. BRIEF DESCRIPTIONS OF FACILITIES

4.1 Category 1 Calls
This enables calls to be made with a data rate of 64 kbit/s unrestricted. The call will not have tones or announcements and will fail if analogue interworking is encountered. See also Section 7.

4.2 Category 2 Calls
This enables calls to be made with a data rate of 64 kbit/s unrestricted unless analogue interworking is encountered. If analogue interworking is encountered then this call will revert to an ordinary telephony type call and a message will be received to say that it is not suitable for data transmission at 64 kbit/s. These calls will have tones and announcements. See also Section 7.

4.3 3.1 kHz Audio Calls
3.1 kHz audio calls are used to specify calls which should bypass speech processing equipment on the telephone network. It is mainly used for analogue data such as modem or fax calls. The call has the same characteristics as Category 2 calls except that they bypass speech processing equipment. See Section 6 for further information.

4.4 Permanent Incoming Call Barring
This allows BT to make a channel or channels outgoing only.

4.5 Permanent Outgoing Call Barring
This allows BT to make a channel or channels incoming only.

4.6 Administration Provided Basic Diversion
This allows BT to divert all calls from a customer's group of lines to an agreed telephone number. The service is suitable for planned outages.

Without Administration Provided Basic Diversion, basic calls continue as normal.

4.7 Administration Provided Diversion on Engaged/Failure
This allows BT to automatically divert calls from a customer's group of lines that are all either engaged or have failed to a pre-arranged telephone number.

If Administration Provided Diversion on Engaged/failure is not enabled then failed calls will receive either Number Unobtainable tone/an out of order announcement (when the ISDN 30 line or ISPBX has failed) or engaged tone (if all the channels are busy).

4.8 Administration Provided Diversion on Ring Tone No Reply
This allows BT to automatically divert calls from a customer's group of lines that have received ring tone for between 15 to 20 seconds. Calls are diverted to any telephone number that has been pre-arranged with BT, however, call diversion to the following numbers is not possible:- 100,112,150,151,152,154 and 999 or other administration numbers such as directory enquiries etc.

If Administration Provided Diversion on Ring Tone No Reply is not enabled then failed calls will continue to receive ringing tone until either the call is answered, the caller hangs up or the network clears the call.

4.9 Customer Controlled Diversion
Once put on the customer's group of lines, the customer will be able to control all 3 diversion services (4.7 to 4.9). The CPE (Customer Premises Equipment) must be capable of sending the correct DASS 2 D channel signalling sequence to the exchange.

4.10 Bypass Number
This allows the customer to have a separate number associated with a channel in a group of lines which bypasses Hunting, Customer Controlled Incoming Call Barring and Diversion.

4.11 Calling Line Identity
This allows the called customer to receive the Line Identity of the calling party (as long as they have not restricted the release of their line identities) before answering the call.

4.12 Calling Line Identity Restriction
This allows the customer to restrict the release of their line identities on outgoing calls. Customers can request that their calling line identity (ISDN number) is not released to the customers they are calling. The following subscription options are available:

a) temporary mode (i.e. setting can be overridden by user) - presentation restricted

b) temporary mode (i.e. setting can be overridden by user) - presentation not restricted i.e. their calling line identity will be released and forwarded to the called user.

Option b) is the default for all users (including users with ex-directory numbers).
In either of the temporary modes (options a or b), the user can override the restricted/not restricted setting by use of the "presentation indicator" in the Calling party number information element or by using in the called party number the prefix digits “141” to restrict on a per call basis and 1470 to release on a per call basis. (Note: when prefix digits are included in the called party number, the type of number in the Called Party Number information element shall be set to "unknown").

4.13 Connected Line Identity Restriction
This allows the customer to permanently restrict the release of their line identities on incoming calls.

4.14 Terminating Line Identity Display
This service allows the customer to receive the line identity of the person they have just called.

4.15 Call Charge Indication
The customer will receive a digital message containing the number of units used and the cost (excluding supplementary services, discounts and VAT) at the end of each call.

4.16 Network Address Extension (Sub Addressing)
This provides the called party with the facility to receive calls with up to an additional 6 alphanumeric characters which allow the caller to address an end point beyond the Network Terminating Point (eg. a process in a host computer or a device connected to a LAN).

4.17 Customer Controlled Channel Busying
The service provides the customer with the means to busy out channels within the group of lines.

4.18 Customer Controlled Call Barring
This will allow customers to activate/deactivate Outgoing Barring or Incoming Barring on ISDN 30 channels.

4.19 Selective Outgoing Call Barring (OCB)
The service will be provided by BT and will allow certain types of outgoing calls to be barred eg. International.

4.20 Call Charge Rate Data
The customer will receive a digital message at the start of a call specifying the rate at which the call will be charged (exclusive of discount schemes, supplementary services and VAT). Should the rate change during the call then another message is sent to update the information.

4.21 Malicious Call Identification
This service is not a customer offering. It can be used in certain instances to help the police, in conjunction with a customer, to identify from where nuisance or malicious calls originate.

4.22 Anonymous Call Rejection (ACR)
This service allows the served user to reject incoming calls from users or subscribers who have restricted the presentation of their calling line identity using to the CLIR service. ACR will reject all calls with CLI marked "presentation restricted" according to CLIR. The calls are rejected regardless of the current state (e.g. free or busy) of the served user's access. The ACR supplementary service will not reject calls with a CLI marked "presentation restricted by network". The served user's ability to originate calls is unaffected by the ACR supplementary service.

4.23 Presentation Number
This service allows the served user to specify the number which the network releases as their calling line identity on outgoing calls. The number specified will be subject to an authorisation process prior to it being provided.

5. INTERACTIONS BETWEEN FACILITIES

5.1 Customer Controlled Diversion (4.10) will allow the Administration Provided Diversion Services (4.7 to 4.9) to be controlled by the Customers.

5.2 Administration Provided Basic Diversion (Para 4.7) will supersede Administration Provided Diversion on Engaged/Failure (Para 4.8) and Administration Provided Diversion on Ring Tone No Reply (4.9).

5.3 Both Administration Provided Diversion on Engaged/Failure and Administration Provided Diversion on Ring Tone No Reply can be operated at the same time independently of each other.

6. PROCESSING OF 3.1 kHz AUDIO CALLS[1]

BTNR 190 Issue 2, published in June 1992, contained additional SIC codes for the support of Category 2, 3.1 kHz audio calls (see BTNR 190; 1992; Section 4; Annex 1; Issue 2; Table 2).

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[1] The information given in this section was first published in SIN 206 and subsequently in SIN 294. With the incorporation of the information in this SIN, SIN 294 and SIN 206 have been withdrawn.

Since then, 3.1 kHz audio call traffic has increased from terminals connected to the BT ISDN2e, ISDN 30 (I.421 and ISDN30e services and also from the ISDNs of other UK and overseas CPs. Consequently, more 3.1 kHz audio calls from these connections will be delivered to the ISDN 30 (DASS)customers with the 3.1 kHz audio SIC.

Despite the growth in usage of 3.1 kHz Audio calls, it has been found that a proportion of ISDN 30 (DASS) terminal equipment does not yet support the DASS 2 request for a 3.1kHz call, resulting in a call rejection. It is recommended therefore that Manufacturers, Suppliers and Maintainers of ISDN 30 (DASS 2) Terminal Equipment contact customers they believe are still affected by this problem.

7. SWAP[2]

A feature of the DASS 2 General Signalling Procedures is the Swap procedure (see BTNR 190 [2], Section 5, sub-section 3) that can be used to change the mode/data rate used on calls that were established either as Category 1 or Category 2.

With the introduction of packet switching technologies, this particular feature will require a different approach by users.

7.1 The Swap feature was designed in the early 1980's when the BT network used only Time Division Multiplexing for its digital transmission systems. In this network architecture, exactly the same digital connections could be used for voice or data applications and hence changing between these 2 modes during a call only required the end-to-end (CPE to CPE) conveyance of a signalling message (the SWAP message) to synchronise the changeover in the CPE. Hence the network was required to take no action on receipt of a SWAP message other than to convey it transparently across the network.

BT has introduced Asynchronous Transfer Mode (ATM) transmission and switching into the network and will increasingly deploy packet switching technologies. A consequence of this is that echo control devices need to be inserted in the connection if it is used for 3.1 kHz voice applications. In this situation, the Swap procedure would only work if the network controlled the insertion of the echo control devices into the circuit under the control of the SWAP messages received. This was not a requirement envisaged in the 1980's and hence was not designed into the Swap procedure.

7.2 Customer based Options for Swap; From investigations undertaken, the Swap procedure does not appear to be used by existing customers.

7.2.1 Option (a): Users should initiate their call in a Category 1 data mode; hence echo controllers would not be inserted in the call path by the network. Should the user then wish to Swap to voice mode they will need to be able to implement some form of echo control within their CPE as otherwise voice could be of poor quality. With CPE based echo control full function should be available.

7.2.2 Option (b): Users should initiate their call in a Category 2 mode; this will avoid the need for echo control within their CPE. However, following the Swap procedure, the nature of echo control in the network will impair the 64kbit/s transparency so that the connection is no longer seen as a 64kbit/s end to end link, and this will limit the usefulness of any data mode connection.

End of Annex

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[2] The information given in this section was first published in SIN 363. With the incorporation of the information in this SIN, SIN 363 has been withdrawn.